

CLAIMS

What is claimed is:

1 ① An apparatus for finding objects in a computer
2 including a display and a pointing device with which a
3 user drags a pointer on the display, comprising:
4 an input that receives an input signal to indicate
5 a drag operation;
6 memory that stores a plurality of objects including
7 enclosures in the memory, wherein enclosures comprise
8 objects which may enclose other objects;
9 window opening logic, coupled with the display, that
10 draws windows on the display corresponding to opened
11 enclosures, wherein a window for an opened enclosure
12 includes identifiers within the window corresponding to
13 objects enclosed by the opened enclosure; and
14 temporary window logic, coupled to the display and
15 the pointing device, that opens a temporary window for
16 the particular enclosure to display identifiers within
17 the temporary window corresponding to objects enclosed by
18 the particular enclosure, in response to a drag during a
19 drag operation of the pointer over an identifier
20 corresponding to a particular enclosure.

1 2. The apparatus of claim 1, further including:
2 logic, coupled to the temporary window logic and to
3 the pointing device that closes the temporary window, in
4 response to a drag during the drag operation of the
5 pointer outside the temporary window.

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1 3. The apparatus of claim 1, further including:
2 logic that places a particular object into the
3 particular enclosure, in response to a drag operation
4 beginning from a position of a selected identifier
5 corresponding to the particular object to another
6 position within a temporary window.

1 4. The apparatus of claim 1, wherein the temporary
2 window logic draws the temporary window on the display
3 over the pointer.

1 5. The apparatus of claim 1, wherein the temporary
2 window logic draws the temporary window on the display
3 over the identifier corresponding to the particular
4 enclosure.

1 6. The apparatus of claim 1, wherein the temporary
2 window logic draws the temporary window on the display
3 centered over the pointer.

1 7. The apparatus of claim 1, wherein the temporary
2 window logic includes:

3 logic that determines whether the display includes
4 an existing window for the particular enclosure during
5 the drag operation to open a temporary window, and if so,
6 then removes the existing window from the display.

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1 12. The apparatus of claim 11, wherein the
2 temporary window selector includes a selector graphic
3 over the identifier for the particular enclosure having
4 a first side and a second side, and the additional user
5 input includes drag of the pointer to the first side to
6 open the temporary window.

1 13. The apparatus of claim 1, wherein identifiers
2 for enclosures include a temporary window region and the
3 temporary window logic includes:

4 logic, coupled to the display and the pointing
5 device that causes the temporary window to be opened, in
6 response to a drag during a drag operation of the pointer
7 over the temporary window region of an identifier
8 corresponding to a particular enclosure.

1 14. The apparatus of claim 1, wherein the temporary
2 window logic includes:

3 logic that opens additional temporary windows as
4 current temporary windows in response to a drag during
5 the drag operation of the pointer over an identifier
6 within current temporary windows.

1 15. The apparatus of claim 14, further including:
2 logic, coupled to the temporary window logic and to
3 the pointing device that closes the additional temporary
4 windows except for the current temporary window, in
5 response to termination of the drag operation with the
6 pointer inside the current temporary window.

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1 16. The apparatus of claim 14, further including:
2 logic, coupled to the temporary window logic and to
3 the pointing device, that after termination of the drag
4 operation closes a particular temporary window opened
5 during the drag operation in response to movement of the
6 pointer out of the particular temporary window.

1 17. The apparatus of claim 14, further including:
2 logic, coupled to the temporary window logic and to
3 the pointing device, that after termination of the drag
4 operation closes temporary windows opened during the drag
5 operation in response to movement of the pointer out of
6 the temporary windows, except for particular temporary
7 windows selected by user input before movement of the
8 pointer out of the temporary windows.

1 18) An apparatus for finding objects within a
2 hierarchy of enclosures in a computer including a display
3 and a pointing device with which a user drags a pointer
4 on the display, comprising:
5 memory to store a plurality of objects including at
6 least one hierarchy of enclosures in the memory, wherein
7 enclosures comprise objects which may enclose other
8 objects;
9 window opening logic, coupled with the display, that
10 draws windows on the display corresponding to opened
11 enclosures, wherein a window for an opened enclosure
12 includes identifiers within the window corresponding to
13 objects enclosed by the opened enclosure;
14 an input to receive an input signal to indicate a
15 drag operation;
16 temporary window opening logic, coupled to the
17 display and the pointing device that opens a current

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18 temporary window for a particular enclosure to display
19 identifiers within the current temporary window
20 corresponding to objects enclosed by the particular
21 enclosure, in response to a drag during a drag operation
22 of the pointer over an identifier corresponding to the
23 particular enclosure, including logic that maintains a
24 hierarchy of opened temporary windows and the current
25 temporary window; and
26 temporary window closing logic, coupled to the
27 temporary window opening logic and the pointing device,
28 that closes the current temporary window in response to
29 a drag during the drag operation of the pointer outside
30 the current temporary window.

1 19. The apparatus of claim 18, wherein the
2 temporary window closing logic includes logic that closes
3 temporary windows in the hierarchy except the current
4 temporary window, in response to a drag operation that
5 ends in the current temporary window.

1 20. The apparatus of claim 18, wherein the
2 temporary window closing logic includes logic that after
3 termination of the drag operation closes a particular
4 temporary window opened during the drag operation in
5 response to movement of the pointer out of the particular
6 temporary window.

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1 21. The apparatus of claim 18, wherein the
2 temporary window closing logic includes logic that after
3 termination of the drag operation closes temporary
4 windows opened during the drag operation in response to
5 movement of the pointer out of the temporary windows,
6 except for particular temporary windows selected by user
7 input before movement of the pointer out of the temporary
8 windows.

1 22. The apparatus of claim 18, further including:
2 logic that places a particular object into the
3 particular enclosure, in response to a drag operation
4 beginning from a position of a selected identifier
5 corresponding to the particular object to another
6 position within the current temporary window.

1 23. The apparatus of claim 18, wherein the
2 temporary window opening logic draws the current
3 temporary window on the display over the pointer.

1 24. The apparatus of claim 18, wherein the
2 temporary window opening logic draws the current
3 temporary window on the display over the identifier
4 corresponding to the particular enclosure.

1 25. The apparatus of claim 18, wherein the
2 temporary window opening logic draws the current
3 temporary window on the display centered over the
4 pointer.

1 26. The apparatus of claim 18, wherein the
2 temporary window opening logic includes:
3 logic that determines whether the display includes
4 an existing window for the particular enclosure during
5 the drag operation to open a current temporary window,
6 and if so, then removes the existing window from the
7 display.

1 27. The apparatus of claim 18, wherein the
2 temporary window opening logic includes:
3 logic that determines whether the display includes
4 an existing window for the particular enclosure during
5 the drag operation to open a current temporary window,
6 and if so, then removes the existing window from the
7 display; and
8 logic that draws the current temporary window on the
9 display over the identifier corresponding to the
10 particular enclosure.

1 28. The apparatus of claim 27, wherein the
2 temporary window opening logic further includes:
3 logic that graphically indicates on the display a
4 zoom of the existing window to the current temporary
5 window.

1 29. The apparatus of claim 27, further including:
2 logic that redraws the existing window on the
3 display when the temporary window in the hierarchy
4 corresponding to the existing window is closed.

1 30. The apparatus of claim 18, wherein the
2 temporary window opening logic includes:
3 logic, coupled to the display and the pointing
4 device, that enables a temporary window selector
5 responsive to additional user input to cause the current
6 temporary window to be opened, in response to a drag
7 during a drag operation of the pointer over an identifier
8 corresponding to a particular enclosure.

1 31. The apparatus of claim 30, wherein the
2 temporary window selector includes a selector graphic
3 over the identifier for the particular enclosure having
4 a first side and a second side, and the additional user
5 input includes drag of the pointer to the first side to
6 open the current temporary window.

1 32. The apparatus of claim 18, wherein identifiers
2 for enclosures include a temporary window region and the
3 temporary window opening logic includes:
4 logic, coupled to the display and the pointing
5 device, that causes the current temporary window to be
6 opened in response to a drag during a drag operation of
7 the pointer over the temporary window region of an
8 identifier corresponding to a particular enclosure.

1 33. An apparatus for copying or moving objects
2 within a hierarchy of enclosures in a computer including
3 a display and a pointing device with which a user drags
4 a pointer on the display, comprising:
5 memory to store a plurality of objects including at
6 least one hierarchy of enclosures in the memory, wherein
7 enclosures comprise objects which may enclose other
8 objects;
9 window opening logic, coupled with the display, that
10 draws windows on the display corresponding to opened
11 enclosures, wherein a window for an opened enclosure
12 includes identifiers within the window corresponding to
13 objects enclosed by the opened enclosure;
14 an input that receives an input signal to indicate
15 a drag operation;
16 temporary window opening logic, coupled to the
17 display and the pointing device, that opens a current
18 temporary window for a particular enclosure to display
19 identifiers within the current temporary window
20 corresponding to objects enclosed by the particular
21 enclosure, in response to a drag during a drag operation
22 of the pointer over an identifier corresponding to the
23 particular enclosure, including logic that maintains a
24 hierarchy of opened temporary windows and the current
25 temporary window;
26 temporary window closing logic, coupled to the
27 temporary window opening logic and the pointing device,
28 that closes the current temporary window in response to
29 a drag during the drag operation of the pointer outside
30 the current temporary window; and
31 object placing logic that places a particular object
32 into the particular enclosure of the current temporary
33 window in response to a drag operation beginning from a

34 position of a selected identifier corresponding to the
35 particular object to another position within the current
36 temporary window.

1 34. The apparatus of claim 33, wherein the
2 temporary window closing logic includes logic that closes
3 temporary windows in the hierarchy except the current
4 temporary window, in response to a drag operation that
5 ends in the current temporary window.

1 35. The apparatus of claim 33, wherein the
2 temporary window closing logic includes logic that after
3 termination of the drag operation closes a particular
4 temporary window in the hierarchy opened during the drag
5 operation in response to movement of the pointer out of
6 the particular temporary window.

1 36. The apparatus of claim 33, wherein the
2 temporary window closing logic includes logic that after
3 termination of the drag operation closes temporary
4 windows in the hierarchy opened during the drag operation
5 in response to movement of the pointer out of the
6 temporary windows, except for particular temporary
7 windows selected by user input before movement of the
8 pointer out of the temporary windows.

1 37. The apparatus of claim 33, wherein the
2 temporary window opening logic draws the current
3 temporary window on the display over the pointer.

1 38. The apparatus of claim 33, wherein the
2 temporary window opening logic draws the current
3 temporary window on the display over the identifier
4 corresponding to the particular enclosure.

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1 39. The apparatus of claim 33, wherein the
2 temporary window opening logic draws the current
3 temporary window on the display centered over the
4 pointer.

1 40. The apparatus of claim 33, wherein the
2 temporary window opening logic includes:

3 logic that determines whether the display includes
4 an existing window for the particular enclosure during
5 the drag operation to open a current temporary window,
6 and if so, then removes the existing window from the
7 display.

1 41. The apparatus of claim 33, wherein the
2 temporary window opening logic includes:

3 logic that determines whether the display includes
4 an existing window opened by the window opening logic for
5 the particular enclosure during the drag operation to
6 open a current temporary window, and if so, then removes
7 the existing window from the display; and

8 logic that draws the current temporary window on the
9 display over the identifier corresponding to the
10 particular enclosure.

1 42. The apparatus of claim 41, wherein the
2 temporary window opening logic further includes:

3 logic that graphically indicates on the display a
4 zoom of the existing window to the current temporary
5 window.

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1 43. The apparatus of claim 41, further including:
2 logic that redraws the existing window on the
3 display when the temporary window in the hierarchy
4 corresponding to the existing window is closed.

1 44. The apparatus of claim 33, wherein the
2 temporary window opening logic includes:

3 logic, coupled to the display and the pointing
4 device, that enables a temporary window selector
5 responsive to additional user input to cause the current
6 temporary window to be opened, in response to a drag
7 during a drag operation of the pointer over an identifier
8 corresponding to a particular enclosure.

1 45. The apparatus of claim 44, wherein the
2 temporary window selector includes a selector graphic
3 over the identifier for the particular enclosure having
4 a first side and a second side, and the additional user
5 input includes drag of the pointer to the first side to
6 open the current temporary window.

1 46. The apparatus of claim 33, wherein identifiers
2 for enclosures include a temporary window region and
3 temporary window opening logic includes:

4 logic, coupled to the display and the pointing
5 device, that causes the current temporary window to be
6 opened in response to a drag during a drag operation of
7 the pointer over the temporary window region of an
8 identifier corresponding to a particular enclosure.